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EXAMINER	
DANIELS, MATTHEW J	
ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,988	THOMAS, DAVID W.	
	Examiner	Art Unit	
	Matthew J. Daniels	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1, 15, 30 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). **As to Claim 1**, Brossy teaches a method for manufacturing smooth surface board from fibrous material (Col. 2, Line 41-47), the method comprising the steps of: moving fibrous material through an oven on a first conveyor assembly to produce a board of fibrous material (Col. 5, Line 20-25), the first conveyor assembly including a first upper conveyor and a first lower conveyor (Col. 5, Line 20-25); passing the fibrous material through the oven at a speed different from the speed of at least one of the first upper conveyor and the first lower conveyor (Col. 3, Line 5-14), causing the fibrous material to skid relative to the at least one of the first upper conveyor and the first lower conveyor (Col. 3, Line 13-15), and thereby resulting in a smooth surface board (Col. 6, Line 35-42). Brossy is silent to pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven. Barry teaches pulling a board of fibrous material (Col. 4, Line 25-38) from the oven with a pulling apparatus downstream of the oven (Col. 5, Line 1-5). The references are properly combinable because both are directed to an apparatus for producing sheets of rigid fibrous boards with a smooth surface. It would have been prima facie obvious to one of ordinary skill in the art

at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 15**, Brossy teaches that which is set forth above in the rejection of Claim 1 under 35 U.S.C. 103(a). Brossy additionally teaches driving one of the first upper conveyor and the first lower conveyor at a speed faster relative to the other of the first upper conveyor and the first lower conveyor (Col. 5, Line 5-10). Brossy is silent to pulling the board of fibrous material from the oven with a pulling apparatus downstream of the oven. Barry teaches that which is set forth above in the rejection of Claim 1 under 35 U.S.C. 103(a). The references are properly combinable because both are directed to an apparatus for producing sheets of rigid fibrous boards with a smooth surface. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 30**, Brossy teaches a ceiling panel that is between 20 to 80 kg per cubic meter (5:30-34). The Examiner calculates 80 kilograms per cubic meter to be equivalent to 4.99 pounds per cubic foot, thus appearing to render the Applicant's 2 to 8 pounds per cubic foot prima facie obvious. **As to Claim 31**, Brossy teaches a ceiling panel that is between 20 to 80 kg per cubic meter (5:30-34). The Examiner calculates 80 kilograms to be 4.99 pounds per cubic foot, thus appearing to render the Applicant's 2 to 8 pounds per cubic foot prima facie obvious.

2. **Claims 2 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a).

As to Claim 2, Brossy is silent to the pulling apparatus applying pressure to a surface of the fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull the board through the oven. The examiner takes the position that the pulling rollers taught by Barry inherently apply pressure to a surface of the fibrous material because without pressure, there would be no frictional force between the roller and the board, and the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 16**, Brossy and Barry teach that which is set forth above in the rejection of Claim 2 under 35 U.S.C. 103(a). The examiner takes the position that the pulling rollers taught by Barry inherently apply pressure to a surface of the fibrous material because without pressure, there would be no frictional force between the roller and the board, and the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

3. **Claims 3 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 3**, Brossy is silent to the pulling apparatus applying pressure being sufficient to

prevent skidding of the fibrous material within the pulling apparatus. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull the fibrous board through the oven. The examiner takes the position that the rollers taught by Barry inherently applied sufficient pressure to prevent skidding because without sufficient pressure to prevent skidding, the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 17**, Brossy is silent to the pulling apparatus applying pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull the fibrous board through the oven. The examiner takes the position that the rollers taught by Barry inherently applied sufficient pressure to prevent skidding because without sufficient pressure to prevent skidding, the pulling action would be absent. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus applies pressure to a surface of the fibrous material, the pressure being sufficient to prevent skidding of the fibrous material within the pulling apparatus, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

4. **Claims 4 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 4,** Brossy is silent to a pulling apparatus comprising a second conveyor assembly including a second upper conveyor and a second lower conveyor. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. The examiner takes the position that the rollers taught by Barry are conveyors, and the pulling apparatus comprises a second upper conveyor and a second lower conveyor. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 17,** Brossy is silent to a pulling apparatus comprising a second conveyor assembly including a second upper conveyor and a second lower conveyor. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. The examiner takes the position that the rollers taught by Barry are conveyors, and the pulling apparatus comprises a second upper conveyor and a second lower conveyor. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus comprises a second conveyor assembly including a second upper conveyor and a second lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

5. **Claims 5 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 5**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 19**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

6. **Claims 6 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 6**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor. Brossy additionally teaches in Col. 3, Line 10 that one method of realizing the invention is to make the lead conveyor the faster conveyor. The examiner takes the position that it would have been obvious to one of ordinary skill to make the alternative choice to make the lead conveyor the slower conveyor and smooth with the fast conveyor side because doing so would avoid buildup of fiber upstream of the conveyor assembly. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface. **As to Claim 20**, Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14). Brossy is silent to a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor. Brossy additionally teaches in Col. 3, Line 10

that one method of realizing the invention is to make the lead conveyor the faster conveyor. The examiner takes the position that it would have been obvious to one of ordinary skill to make the alternative choice to make the lead conveyor the slower conveyor and smooth with the fast conveyor side because doing so would avoid buildup of fiber upstream of the conveyor assembly. Barry teaches pulling rollers (Fig. 1, Items 18 and 19) which pull fibrous board through an oven. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the pulling apparatus of Barry, wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor, be combined with the apparatus of Brossy to further orient the fibers in the board and thereby further improve the smoothness of the surface.

7. **Claims 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 7**, Brossy teaches conveying a board of fibrous material at a speed different than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors. Brossy and Barry are silent to pulling the boards of fibrous material at a speed different relative both the first upper conveyor and the first lower conveyor. However, Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed different than the speed of both the first upper conveyor

and first lower conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling, and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, and pulling the board of fibrous material at a speed different than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie.

8. **Claims 8, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). Brossy in view of Barry and Debouzie teaches the subject matter of Claim 7. See the rejection of Claim 7 under 35 U.S.C. 103(a). **As to Claim 8**, Brossy, Barry, and Debouzie are silent to the pulling apparatus pulling the board of fibrous material at a speed faster than the speed of both the first upper conveyor and first lower conveyor. Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors,

producing a smoothing effect. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1) with pulling rollers. Brossy and Barry are silent to pulling the board of fibrous material at a speed faster relative both the first upper conveyor and the first lower conveyor. It would have been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing. It would have also been obvious to one of ordinary skill in the art at the time of the invention that the separate gluing operation taught by Brossy could be eliminated if both faces could be smoothed in the same operation. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that this dual smoothing action could be achieved by combining the pulling apparatus of Barry in the apparatus of Brossy and pulling the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board at the same time and allow removal of the separate gluing operation for finishing the second face of the board, as well as producing a fibrous board with higher longitudinal strength. **As to Claim 21,** Brossy teaches conveying a board of fibrous material at a speed different from the speed of one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous material in the oven to slip relative to a surface of one of the first conveyors, causing surface smoothing. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a

separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1). Brossy and Barry are silent to pulling the board of fibrous material at a speed different from the speed of both the first upper conveyor and the first lower conveyor. It would have been obvious to one of ordinary skill to pull the board at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to produce a thinner sheet with oriented fibers on both faces for use in confined areas or lightweight applications where a high longitudinal strength was beneficial, or in applications where both faces would be visible to the user. It would have also been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the pulling apparatus of Barry in the apparatus of Brossy and pull the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board and allow removal of the separate gluing operation for finishing the second face of the board and produce a thinner sheet with higher longitudinal strength. **As to Claim 22**, Brossy, Barry, and Debouzie are silent to the pulling apparatus pulls the board of fibrous material at a speed faster than the speed of both the first upper conveyor and first lower conveyor. Brossy teaches conveying a board of fibrous material at a speed faster than the speed of the at least one of the first upper conveyor and first lower conveyor (Col. 3, Line 5-14) causing the fibrous

material in the oven to slip relative to a surface of one of the first conveyors, producing a smoothing effect. Brossy further teaches gluing a glass fiber skin to the opposite side of the board in a separate operation (Col. 4, Line 43) in order to avoid the risk of driving the mineral wool mattress by both conveyors alternately. Barry teaches pulling the board of fibrous material through an oven (Fig. 1) with pulling rollers. Brossy and Barry are silent to pulling the board of fibrous material at a speed faster relative both the first upper conveyor and the first lower conveyor. It would have been desirable to one of ordinary skill in the art that both faces of the board be smoothed to facilitate easier handling and make the board more aesthetically pleasing. It would have also been obvious to one of ordinary skill in the art at the time of the invention that the separate gluing operation taught by Brossy could be eliminated if both faces could be smoothed in the same operation. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that this dual smoothing action could be achieved by combining the pulling apparatus of Barry in the apparatus of Brossy and pulling the board of fibrous material at a speed faster relative to both the first upper conveyor and the first lower conveyor in order to cause the fibrous material in the oven to slip relative to a surface of the first upper conveyor and a surface of the first lower conveyor such that the opposing faces of the fibrous material are smoothed because doing so would smooth both faces of the board at the same time and allow removal of the separate gluing operation for finishing the second face of the board, as well as producing a fibrous board with a higher longitudinal strength.

9. **Claims 9 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559) and Debouzie (USPN 4,632,685).

Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). Brossy in view of Barry and Debouzie teaches the subject matter of Claims 7 and 21. See the rejection of Claims 7 and 21 under 35 U.S.C. 103(a). **As to Claim 9**, Brossy and Barry are silent to the pulling apparatus pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor. Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling, and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, and pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie. **As to Claim 23**, Brossy and Barry are silent to the pulling apparatus pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor. Debouzie teaches employing a series of conveyors wherein the pulling apparatus pulls the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower

conveyor (Col. 8, Line 55-57) to produce a longitudinal compression, which produces a thicker mat that resists compression and tearing in the direction of the thickness. It would have been obvious to one of ordinary skill in the art at the time of the invention that a fibrous mat that resists compression and tearing in the direction of the thickness would have been useful in a multitude of applications such as insulation, ceiling tiles, floor tiles, acoustic paneling, and vehicle headliners. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use the pulling apparatus of Debouzie, pulling the board of fibrous material at a speed slower than the speed of both the first upper conveyor and first lower conveyor, in the apparatus of Brossy and Barry to achieve the same longitudinal compression that would impart useful characteristics to the board such as improved resistance to compression and tearing in the direction of the thickness, as taught by Debouzie.

10. **Claims 10 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 10**, Brossy teaches (Col. 2, Line 40-47) a mineral wool product. The fibrous mineral material sought by applicant in Claim 10 was prima facie obvious at the time of the invention. **As to Claim 24**, Brossy teaches (Col. 2, Line 40-47) a mineral wool product. The fibrous mineral material sought by applicant in Claim 10 was prima facie obvious at the time of the invention.

11. **Claims 11 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559), and further in view of Mazza (USPN 5,843,523). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 11**, Brossy is silent to the pulling apparatus comprising a spiked wheel. Mazza teaches (Col. 7, Line 5-6) a driven spike roller for pulling material. The references are properly combined because both are directed to conveying a continuous web of fibers and application of a stiffening agent. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to combine the spiked wheel of Mazza with the apparatus of Brossy to provide enhanced gripping of the fibrous web because enhanced gripping would result in further oriented fibers and an improved degree of smoothing. **As to Claim 25**, Brossy is silent to the pulling apparatus comprising a spiked wheel. Mazzza teaches that which is set forth above. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the spiked wheel of Mazza with the apparatus of Brossy to provide enhanced gripping of the fibrous web because enhanced gripping would result in further oriented fibers and an improved degree of smoothing.

12. **Claims 12 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 12**, Brossy teaches (Col. 5, Line 23-29) surfaces of the first upper and first lower conveyor are foraminous. Therefore, the foraminous surfaces sought by applicant in Claim 12 were prima facie obvious to one of ordinary skill at the time of the invention. **As to Claim 26**,

Brossy teaches (Col. 5, Line 23-29) surfaces of the first upper and first lower conveyor are foraminous. Therefore, the foraminous surfaces sought by applicant in Claim 26 were prima facie obvious to one of ordinary skill at the time of the invention.

13. **Claims 13 and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 13**, Brossy teaches conveyors that no longer define strictly even surfaces after replacement of individual pallets due to wear or fouling (Col. 5, Line 38-42). The examiner takes the position that at a time before replacement of pallets, the conveyors would have defined even surfaces that were substantially smooth in order for Brossy to teach the distinction between these states. It would have also been obvious to one of ordinary skill that in order to perform surface smoothing as taught by Brossy, a substantially smooth surface would be required to avoid displacing fibers from the plane of the board and thereby roughening the board. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the surfaces of the first upper conveyor and the first lower conveyor be substantially smooth in order to create a smoothed surface on the board. **As to Claim 27**, Brossy teaches conveyors that no longer define strictly even surfaces after replacement of individual pallets due to wear or fouling (Col. 5, Line 38-42). The examiner takes the position that at a time before replacement of pallets, the conveyors would have defined even surfaces that were substantially smooth in order for Brossy to teach the distinction between these states. It would have also been obvious to one of ordinary skill that in order to perform surface smoothing as

taught by Brossy, a substantially smooth surface would be required to avoid displacing fibers from the plane of the board and thereby roughening the board. Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention that the surfaces of the first upper conveyor and the first lower conveyor be substantially smooth in order to create a smoothed surface on the board.

14. **Claims 14 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claims 1 and 15. See the rejection of Claims 1 and 15 under 35 U.S.C. 103(a). **As to Claim 14,** it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention combining the pulling apparatus of Barry in the apparatus of Brossy that the coefficient of friction between the board and the pulling rollers would have necessarily been greater relative to the coefficient of friction between the board and the surfaces of the first upper conveyor and first lower conveyor in order that the pulling action and forward motion of the board be present. **As to Claim 28,** it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention combining the pulling apparatus of Barry in the apparatus of Brossy that the coefficient of friction between the board and the pulling rollers would have necessarily been greater relative to the coefficient of friction between the board and the surfaces of the first upper conveyor and first lower conveyor in order that the pulling action and forward motion of the board be present.

15. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brossy (USPN 4,992,227) in view of Barry (USPN 6,030,559). Brossy in view of Barry teaches the subject matter of Claim 15. See the rejection of Claim 15 under 35 U.S.C. 103(a). Brossy further teaches driving one of the first upper conveyor and the first lower conveyor at a speed below 5 percent faster relative to the other of the first upper and the first lower conveyor (Col. 3, Line 34-38 and Col. 5, Line 48). Therefore, the about 0.4 to about 4.0 percent faster sought by applicant in Claim 29 is encompassed by the range taught by Brossy and would have been prima facie obvious to one of ordinary skill at the time of the invention.

Response to Arguments

Applicant's arguments filed 24 February 2005 have been fully considered but they are not persuasive. The Applicant's arguments appear to be on the following grounds:

a) In response to the rejection of Claims 1 and 15, the reference to Barry is not analogous art because it teaches a free-rise foam material and a discontinuous web allowing easy penetration of the web's pattern with the foamable mixture. No one skilled in the art would look to this free rise foam manufacturing method as a way to smooth the surface of fibrous materials.

b) Brossy is silent to the limitations cited on Page 8 of the Applicant's arguments, and Barry fails to teach or supply any of those limitations.

c) In response to the rejection of Claims 7 and 8, there is no motivation to combine the reference of Barry with that of Brossy and Debouzie because the reference to Barry is not analogous art.

d) In response to the rejection of Claims 9 and 23, there is no motivation to combine the reference of Barry with that of Brossy and Debouzie because the reference to Barry is not analogous art.

e) In response to the rejection of Claims 11 and 25, there is no motivation to combine the reference of Barry with that of Brossy and Mazza because the reference to Barry is not analogous art.

These arguments are not persuasive for the following reasons:

a) In response to applicant's argument that the reference to Barry is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Applicant's invention is directed to "inline production of smooth surface board from fibrous mineral material" (See Applicant's specification, Page 1, lines 5-8). The Examiner maintains that the reference to Barry is within the field of Applicant's endeavor because Barry also teaches an inline process (See Fig. 1) for production of smooth surface boards ("especially flat surface" 1:56-57) from fibrous mineral material (4:25-30). The Applicant appears to assert that the web of Barry is taught to be thin, discontinuous, and impregnated with free-rise foam, and therefore one would not look to the reference of Barry for its teachings. However, the Applicant's arguments do not appear to consider that Barry also teaches that the fibrous material can be comprised of more than one layer (2:19-21), having a configuration that is variable with

penetrable openings suitably spaced over the full extent of its network (2:24-27), which appears to contradict the Applicant's arguments. The foam binds the fibers together in the network, and is therefore a binder, as also taught in the method of Brossy. The Examiner maintains the position set forth previously that the methods of Brossy and Barry are analogous art, and therefore properly combinable.

In response to applicant's argument that there is no suggestion to combine the references, the Applicant's position is noted. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner maintains that it would have been obvious to make the combination to further orient the fibers and improve the smoothness of the board. As evidence, the Examiner cites Brossy's teaching to accentuate adherence on the slower conveyor by establishing particular gas flow (3:49-56), however, this leads to fiber incrustation into the orifices of the pallets (3:59-61), and afterwards one finds these marks on the opposite face of the product (3:61-62). One of ordinary skill would have also found these marks undesirable, particularly in view of the separate gluing operation performed on top of the "unsmooth" side taught by Brossy (4:42-43). Smoothing of both faces concurrently would have been obviously desirable to avoid this "unsmooth" side. One of ordinary skill would have recognized that the method of Barry teaches pulling rollers that allow a high degree of uniformity in surface flatness (1:49) to be achieved on both faces concurrently. Thus, one of

ordinary skill would have found it obvious and desirable to combine the pulling rollers of Barry with the method of Brossy in order to further orient the fibers and improve the smoothness of the board to produce a high degree of uniformity in surface flatness on both faces concurrently, as in the method of Barry.

b) The Applicant's arguments asserting Barry's failure to teach of supply any of the features cited on page 8 of the Remarks are noted. However, the Examiner respectfully submits that Barry teaches or renders obvious all but the last of the limitations listed in Page 8 of the remarks, and these limitations would have therefore been prima facie obvious in the combined method. The last limitation was found to be prima facie obvious over Debouzie. See the rejection of Claim 9 in the previous action. Barry teaches or renders obvious the following limitations:

- the pulling of the board from the oven with a pulling apparatus downstream of the oven (8:42 and Fig. 1, Items 18 and 19)
- the limitation of applying pressure to the surface of the fibrous board would have been inherent in the combined method because Barry teaches pull rolls (8:42). In order to pull anything, they must inherently apply pressure.
- the limitation of the pulling apparatus applying pressure to prevent skidding within the pulling apparatus would have been inherent in the method of Barry in order for the pulling rolls to perform their intended function as "pull rolls." If they did not apply pressure sufficient to prevent skidding, they would not pull anything, and thus would not have been labeled as "pull rolls."

- The rolls of Barry are inherently conveyor assemblies. The two rolls are a first and second assembly.
- The rolls of Barry would inherently have pulled the board of fibrous material in the combined method.

Additionally, Debouzie was used in the rejection of Claim 9 to show that the last limitation listed on Page 8, namely a pulling apparatus pulling the board of fibrous material at a speed slower than the speed of the at least one of the first upper conveyor and the first lower conveyor would have also been obvious in order to impart improved resistance to compression and tearing in the thickness, as taught by Debouzie.

c, d, and e) The Applicant's additional arguments appear to be directed to the asserted non-analogousness of Barry and the asserted lack of motivation to combine the method of Barry with that of Brossy. However, these arguments are not persuasive for the same reasons set forth above:

In response to applicant's argument that the reference to Barry is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Applicant's invention is directed to "inline production of smooth surface board from fibrous mineral material" (See Applicant's specification, Page 1, lines 5-8). The Examiner maintains that the reference to Barry is within the field of Applicant's endeavor because Barry also teaches an inline process (See Fig. 1) for production of smooth surface boards ("especially flat surface" 1:56-57) from fibrous mineral

material (4:25-30). The Applicant appears to assert that the web of Barry is taught to be thin, discontinuous, and impregnated with free-rise foam, and therefore one would not look to the reference of Barry for its teachings. However, the Applicant's arguments do not appear to consider that Barry also teaches that the fibrous material can be comprised of more than one layer (2:19-21), having a configuration that is variable with penetrable openings suitably spaced over the full extent of its network (2:24-27), which appears to contradict the Applicant's arguments. The foam binds the fibers together in the network, and is therefore a binder, as also taught in the method of Brossy.

In response to applicant's argument that there is no suggestion to combine the references, the Applicant's position is noted. However, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner maintains that it would have been obvious to make the combination to further orient the fibers and improve the smoothness of the board. As evidence, the Examiner cites Brossy's teaching to accentuate adherence on the slower conveyor by establishing particular gas flow (3:49-56), however, this leads to fiber incrustation into the orifices of the pallets (3:59-61), and afterwards one finds these marks on the opposite face of the product (3:61-62). One of ordinary skill would have also found these marks undesirable, particularly in view of the separate gluing operation performed on top of the "unsmooth" side taught by Brossy (4:42-43). Smoothing of both faces concurrently would have

been obviously desirable to avoid this "unsmooth" side. One of ordinary skill would have recognized that the method of Barry teaches pulling rollers that allow a high degree of uniformity in surface flatness (1:49) to be achieved on both faces concurrently. Thus, one of ordinary skill would have found it obvious and desirable to combine the pulling rollers of Barry with the method of Brossy in order to further orient the fibers and improve the smoothness of the board to produce a high degree of uniformity in surface flatness on both faces concurrently, as in the method of Barry.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJD 5/3/05

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER